can be simply and easily controlled without reading the function characters and/or the indication characters on the switches. Thus, it can be used even in the dark.

Since those having ordinary knowledge and skill in the art of the present invention will recognize additional modifications and applications within the scope thereof, the present invention is not limited to the embodiments and drawings described above.

WHAT IS CLAIMED IS:

1. A multi-directional ball switch comprising:

a panel(2) having 4 diagonally-located fixtures(9~12), each of which has an orthogonal shaft-hole(14);

a ball knob(3) placed on said panel(2);

a conversion means(4) that transforms the rotation of said ball knob(3) into an electric signal;

a CPU(6) that is connected to said conversion means(4) and to a sound generation section(5);

a switching section(7) that restrains the rotation of said ball knob(3) and generates an output value from said CPU(6); and

a signal generation section(6b) connected to said CPU(6).

2. A multi-directional ball switch as claimed in claim **1**,

wherein said conversion means(4) comprises:

4 rotation shafts(26~29) that are inserted into the shaft holes(14) of said 4 fixtures(9~12) respectively; and

4 click encoders(22~25) into which ends of said 4 rotation shafts(26~29) are inserted respectively;

wherein bottoms of said 4 click encoders(22~25) are fixed on said panel(2)

3. A multi-directional ball switch as claimed in claim **1**,

wherein said sound generation section(5) is established to generate different characteristic sounds through a speaker(5a) according to the directions of movements of said ball knob(3) such as up, down, left, right and press.

4. A multi-directional ball switch as claimed in claim **1**,

wherein said switching section(7) comprises:

a supporting plate(33) having a hinge hole(33a);

a hinge shaft(34) that is inserted into said hinge hole(33a);

a stopper(38) that is equipped with a supporting ball(36) located at the center of said supporting plate(33); and

a press sensor(39) that is installed between the top of free-end of said supporting plate(33) and the down surface of said panel(2).

5. A multi-directional ball switch as claimed in claim **2**,

wherein said rotation shafts(26~29) are installed to support both sides of said ball knob(3) so that said ball knob(3) can rotate only one direction of up/down or left/right at a time.

6. A multi-directional ball switch as claimed in claim **2**,

wherein said 4 click encoders(22~25) are constructed to generate a click sound or a click vibration while said rotation shafts(26~29) are rotating.

7. An operation method of a multi-directional ball switch characterized in that, for the case of map-

search on Internet, a cursor is scrolled into 4 directions on the map, and at said scrolled position, a designated portion of said map is enlarged or contracted by moving said ball knob upward or downward in a pressing state.

8. An operation method of a multi-directional ball switch characterized in that, for the case of web-search on Internet, a cursor is quickly moved into a prescribed position of a search window or an execution command indicated on web page by rotating a ball knob to up/down/left/right directions, and a web-search window can be changed by rotating said ball knob to up/down/left/right directions with being pressed.

9. An operation method of a multi-directional ball switch characterized by, for the case of inputting Korean alphabet, moving a ball knob upward to select a consonant input mode, scrolling said ball knob upward/downward to select a desired consonant, and thereafter selecting a desired vowel by using the short/long movements of said ball knob to the right and/or downward directions.